



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

August 29, 2013

Mr. Ray Lieb
Site Vice President
FirstEnergy Nuclear Operating Company
Mail Stop A-DB-3080
5501 North State, Route 2
Oak Harbor, OH 43449-9760

**SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1 - REQUEST FOR
ADDITIONAL INFORMATION RELATED TO STEAM GENERATOR
INVENTORY CHANGE (TAC NO. MF0536)(L-13-040)**

Dear Mr. Lieb:

By letter dated January 18, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13018A350), FirstEnergy Nuclear Operating Company (FENOC, the licensee) submitted a license amendment request (LAR) for the Davis-Besse Nuclear Power Station, Unit No. 1. The request is to revise Technical specification (TS) 3.4.17, "Steam Generator [SG] Tube Integrity," TS 3.7.18, "Steam Generator Level," TS 5.5.8, "Steam Generator Program," and TS 5.6.6, "Steam Generator Tube (SGTIR) Inspection Report." The revision of these TSs was requested to support replacement of the original SGs during a refueling outage in April 2014. The proposed changes to TSs 3.4.17, 5.5.8, and 5.6.6 include adoption of the program improvements in Technical Specifications Task Force, TSTF-510, Revision 2, "Revision to Steam Generator Program Inspection Frequencies and Tube Sample Selection," which was approved by the NRC on October 27, 2011.

The NRC staff is reviewing your submittal and has determined that additional information is required to complete the review. The specific information requested is addressed in the enclosure to this letter. During a discussion with your staff on August 19, 2013, it was agreed that you would provide a response within 30 days from the date of this letter.

The NRC staff considers that timely responses to requests for additional information help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources.

R. Lieb

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If circumstances result in the need to revise the requested response date, please contact me at (301) 415-2315.

Sincerely,

/ RA /

Eva A. Brown, Senior Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

R. Lieb

- 2 -

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/ **RA** /

Eva A. Brown, Senior Project Manager
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REQUEST FOR ADDITIONAL INFORMATION

STEAM GENERATOR REPLACEMENT

DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1

FIRSTENERGY NUCLEAR OPERATING COMPANY

DOCKET NO. 50-346

1. As stated in Technical specification (TS) 3.4.17 Bases, Davis-Besse Nuclear Power Station (DBNPS), Unit 1, (FENOC, the licensee) uses the Nuclear Energy Institute (NEI) 97-06, "Steam Generator [SG] Program Guidelines", and the Electric Power Research Institute (EPRI) guidelines referenced therein, to establish the content of the SG Program required by the DBNPS TS. The structural integrity performance criteria that are established to prevent tube burst, are addressed in Section 3.2 of the EPRI SG Integrity Assessment Guidelines. This section states, in part:

A structural limit is established from the mean (best estimate) regression relationship for tube failure for the conditions defined by the SIPC. The condition monitoring [CM] limit is obtained by modifying the structural limit to account for the uncertainties associated with the tube failure regression model, material properties, and the NDE [non-destructive examination] system. The repair limit and OA [operational assessment] limit are obtained by further modification to consider degradation growth, and require that flaws on tubes remaining in service at the beginning of cycle satisfy the structural integrity performance criterion over the next inspection interval.

Discuss how TSs 3.4.17 and 5.5.8 will ensure that the condition monitoring and OA examinations will account for uncertainties associated with the tube failure regression model, material properties, and the NDE system, in accordance with the SG Program that you are required to establish per TS 5.5.8.

Background

In its application, the licensee stated that the new SGs have different dimensions, materials, and thermal performance from that of the original SGs, and because of these differences a revision to the TS is required. TS 3.7.18 requires SG water level restrictions based on preserving the initial condition assumptions for the SG inventory used in the main steam line break (MSLB) analyses presented in the updated safety analysis report (USAR). The four restrictions in TS 3.7.18 are based on the specific physical design characteristics and dimensions of the SGs. FENOC is proposing to revise this TS so that it addresses the new physical design characteristics of the new SGs.

Enclosure

In addition, the licensee stated:

The proposed new [TS 3.7.18] curve was developed using the same methodology that was used for developing the original curve, but the supporting analyses are based on the dimensions and thermal performance of the replacement SGs. The existing USAR MSLB analysis remains bounding. To provide the technical bases for the proposed LCO [limiting condition for operation] 3.7.18.b, c, and d, requirements, calculations were performed using the same methodology as that used in the original calculations.

2. Describe the methodology and provide a summary of the analysis that was used to develop the new TS 3.7.18 curve.
3. Describe the methodology and provide a summary of the analysis that was used to perform the calculations for LCO 3.7.18.b, c, and d.
4. Chapter 15.5 of the USAR reference 56 is BAW-10193PA, "RELAP5/MOD2-B&W for Safety Analysis of B&W Designed Pressurized Water Reactors," Rev 0, January 2000. BAW-10193(P)(A), Appendix A, Table A.1, lists those accidents and transients that are modeled using the modeling scheme illustrated in Figure A.1 of the report. Appendix A of the report, Section A.1.1, also provides a general statement regarding the dominant characteristics, which could be affected by a SG replacement, that are essential in determining how to use the Figure A.1 model.

Provide a disposition for each Appendix A, Table A.1 of BAW-10193PA, of these events that summarizes the impact that the new SG inventory would have on the consequences postulated for each event.